

REMARKS

Claims 1-7 and 19-21 are pending for further examination. Claims 8-18 were withdrawn from consideration as the result of a restriction requirement.

Claim 1 has been amended. Claims 20-21 are new. Support for claims 20-21 may be found, for example, in FIGS. 1 and 2A.

In the Office action, the claims were rejected as follows:

(1) Claims 1, 3, 4, and 19 were rejected under 35 U.S.C. § 102 as anticipated by U.S. Patent No. 6,281,047 (Wu et al.).

(2) Claims 2 and 6 were rejected under 35 U.S.C. § 103(a) as unpatentable over the Wu patent in view of U.S. Patent No. 6,143,981 (Glenn).

(3) Claim 5 was rejected under 35 U.S.C. § 103(a) as unpatentable over the Wu patent in view of U.S. Patent Application No. 2002/0056926 (Jung et al.).

(4) Claim 7 was rejected under 35 U.S.C. § 103(a) as unpatentable over the Wu patent in view of the Glenn patent further in view of U.S. Patent No. 6,836,009 (Koon et al.).

Claims 1-7 and 19-20 Should Be Allowed

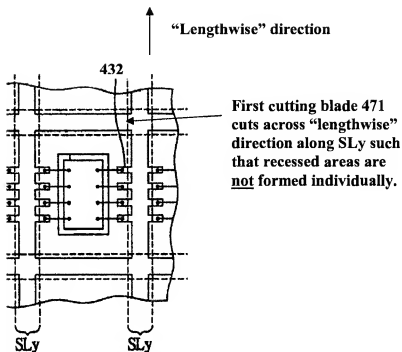
Claim 1 recites a circuit device that includes a conductive pattern; a circuit element affixed onto the conductive pattern; and an insulating resin that seals the conductive pattern and the circuit element while exposing at least a bottom surface of the conductive pattern. Recessed areas are in side surfaces of the insulating resin such that outwardly facing outer peripheral parts of the conductive pattern are exposed from within the recessed areas. The top surface of the circuit device consists of insulating resin.

Claim 1 has been amended to recite that the recessed areas in the side surfaces of the insulating resin are "formed individually." An example is illustrated in FIG. 1 in which each

side surface of the insulating resin 14 has four recessed areas that are formed individually, *i.e.*, the recessed areas are separate from one another.

The Wu et al. patent discloses a circuit device that includes a semiconductor chip 440 mounted on a die pad 431, a plurality of inner leads 432, an encapsulant 450, and a set of bonding wires 441 that electrically couple the semiconductor chip to the inner leads. *See* FIG. 4C. The circuit device has recessed areas in certain side surfaces that expose parts of inner leads 432.

However, the recessed areas disclosed in the Wu et al. patent are not “formed individually,” as is recited in claim 1 of the pending application. Instead, in the side surfaces of the circuit device having a recessed area, the recessed area extends across the entire lower portion of the side surface. *See* FIGS. 4B-4C of the Wu et al. patent. Thus, a single recessed area exposes parts of several inner leads 432 in a side surface of the circuit device. This feature results from the manufacturing process disclosed in the Wu et al. patent: in a first step (see illustration below), a first cutting blade 471 cuts both the inner leads 432 and a lower portion of the encapsulant 450 across the “lengthwise” direction; second, as illustrated in FIG. 4B, a thinner cutting blade 472 cuts the remaining top portion of the encapsulant 450. *See, e.g.*, Fig. 4A-C; col. 7, lns. 10-53.



Accordingly, the Wu et al. patent does not disclose a recessed areas that are “formed individually,” as is recited in claim 1.

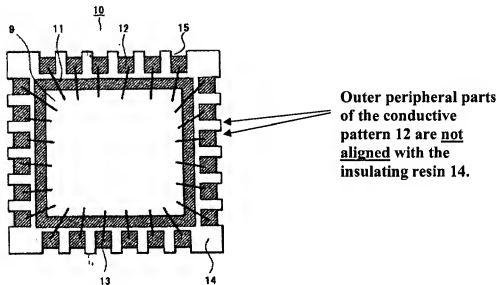
For at least the foregoing reasons, claim 1 should be allowed. Claims 2-7 and 19-20, which depend from claim 1, should be allowed for at least the same reasons.

Claim 21 Should Be Allowed

Like claim 1, claim 21 recites a circuit device that includes a conductive pattern; a circuit element; an insulating resin; recessed areas in side surfaces of the insulating resin such that outwardly facing outer peripheral parts of the conductive pattern are exposed from within the recessed areas. The outwardly facing outer peripheral parts of the conductive pattern are “not aligned with” a side surface of the insulating resin.

An example is illustrated in FIG. 2A (reproduced below with annotations to facilitate understanding) in which the outwardly facing outer peripheral parts of the conductive pattern 12 are not aligned with the a side surface of the insulating resin 14.

FIG.2A



In contrast, in the circuit device of the Wu et al. patent, the inner leads 432 are aligned with side surfaces of the encapsulant 450 at a lower portion of the circuit device. As explained above, in the first step of creating the recessed area, the cutting blade 471 cuts both the inner leads 432 and a lower portion of the encapsulant 450 across the “lengthwise” direction. As a result, in the lower portion of the resulting circuit device, the outer peripheral parts of the inner leads 432 are flush with the encapsulant 450, *i.e.*, the outer peripheral parts of the inner leads 432 align with a side surface of the encapsulant 450. See FIG. 4C. Thus, the Wu et al. patent does not disclose outwardly facing outer peripheral parts of the conductive pattern that are “not aligned with” a side surface of the insulating resin.

For at least the foregoing reasons, claim 21 should also be allowed.

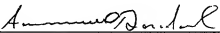
Conclusion

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

The fee for excess claims and the Petition for Extension of Time are being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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